

Name : _____

Score : _____

Scientific Notation

Simplify and express in scientific notation:

Example 1

$$(5 \times 10^6) (7 \times 10^9)$$

$$\begin{aligned} (5 \times 10^6) (7 \times 10^9) &= 35 \times 10^6 \times 10^9 \\ &= 35 \times 10^{15} \\ &= \mathbf{3.5 \times 10^{16}} \end{aligned}$$

Example 2

$$\begin{aligned} \frac{9 \times 10^8}{8 \times 10^{-2}} &= \frac{9}{8} \times 10^8 \times 10^2 \\ &= \mathbf{1.125 \times 10^{10}} \end{aligned}$$

Simplify each problem and express the answer in scientific notation.

1) $(2 \times 10^7) (9 \times 10^{-3})$

Answer : _____

2) $\frac{15 \times 10^{-5}}{4 \times 10^{-7}}$

Answer : _____

3) $\frac{15 \times 10^{-7}}{16 \times 10^{-5}}$

Answer : _____

4) $(9 \times 10^8) (7 \times 10^5)$

Answer : _____

5) $(8 \times 10^{-7}) (3 \times 10^{-6})$

Answer : _____

6) $\frac{7 \times 10^{-3}}{16 \times 10^2}$

Answer : _____

7) $\frac{4 \times 10^8}{1 \times 10^4}$

Answer : _____

8) $(4 \times 10^3) (4 \times 10^7)$

Answer : _____

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Answer key

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Example 1

$$(5 \times 10^6) (7 \times 10^9)$$

$$\begin{aligned}
 (5 \times 10^6) (7 \times 10^9) &= 35 \times 10^6 \times 10^9 \\
 &= 35 \times 10^{15} \\
 &= \mathbf{3.5 \times 10^{16}}
 \end{aligned}$$

Example 2

$$\begin{aligned}
 \frac{9 \times 10^8}{8 \times 10^{-2}} &= \frac{9}{8} \times 10^8 \times 10^2 \\
 &= \mathbf{1.125 \times 10^{10}}
 \end{aligned}$$

Simplify each problem and express the answer in scientific notation.

1) $(2 \times 10^7) (9 \times 10^{-3})$

Answer : $\mathbf{1.8 \times 10^5}$

2) $\frac{15 \times 10^{-5}}{4 \times 10^{-7}}$

Answer : $\mathbf{3.75 \times 10^2}$

3) $\frac{15 \times 10^{-7}}{16 \times 10^{-5}}$

Answer : $\mathbf{0.9375 \times 10^{-2}}$

4) $(9 \times 10^8) (7 \times 10^5)$

Answer : $\mathbf{6.3 \times 10^{14}}$

5) $(8 \times 10^{-7}) (3 \times 10^{-6})$

Answer : $\mathbf{2.4 \times 10^{-12}}$

6) $\frac{7 \times 10^{-3}}{16 \times 10^2}$

Answer : $\mathbf{0.4375 \times 10^{-5}}$

7) $\frac{4 \times 10^8}{1 \times 10^4}$

Answer : $\mathbf{0.4 \times 10^5}$

8) $(4 \times 10^3) (4 \times 10^7)$

Answer : $\mathbf{1.6 \times 10^{11}}$